

Amendments to the Claims:

1 - 27. (canceled)

28. (currently amended) A casting procedure, particularly for engine cylinder heads, comprising steps of:

providing for a mold having open feeding risers for feeding ~~the casting~~ molten metal into the mold as the cooled metal shrinks and for attracting any slag, fumes and gases contained in the molten metal;

forcing molten metal to flow into the mold and said risers from a furnace situated below said mold by exerting a pressure on the surface of said molten metal in the furnace; and

sealing the top of the mold, at least at the level of the open risers, using a plate which ~~prevent~~ prevents the molten metal introduced under pressure from overflowing and which is connected to a vacuum device for ~~vacuuming~~ removing fumes and gases.

29. (previously presented) A casting procedure in accordance with claim 28, in which the expulsion of the casting from the mold takes place below it.

30. (previously presented) A casting procedure in accordance claim 29, in which at least the upper part of the figure of the casting is obtained using cores.

31. (previously presented) A casting procedure in accordance with claim 29, in which at least the upper part of the figure of the casting is obtained using a metal cope.

32. (currently amended) A casting machine for receiving a mold as recited in claim 28, where the mold is equipped with a bottom and an ejector plate extending downwards from said bottom, the casting machine comprising a lower main structure ~~(30)~~ suitable for housing a holding or maintenance furnace ~~(32)~~ for feeding the mold

~~in a low-pressure casting procedure or in a casting procedure according to claim 28,~~
an upper main structure ~~(31)~~ resting on said lower structure, a base plate ~~(29)~~ resting on the upper main structure ~~(31)~~, a cooled plate ~~(16)~~ positioned on the base plate ~~(19)~~ and suitable for receiving the bottom ~~(35)~~ of the mold, and further comprising, underneath the cooled plate ~~(16)~~, a plate holder ~~(17)~~ to be fastened to the ~~ejectors~~ ejector plate of the mold and running vertically between an inactive lowered position and a raised casting expulsion position.

33. (currently amended) A casting machine according to claim 32, wherein the cooled plate ~~(16)~~ is fitted with an opening ~~(16')~~ for passage of the ~~ejectors~~ ejector plate ~~(38)~~.

34. (currently amended) A casting machine according to claim 33, comprising quick lock means for fastening together the ~~ejectors~~ ejector plate ~~(38)~~ of the mold and the plate holder ~~(17)~~ of the casting machine.

35. (currently amended) A casting machine according to claim 34, in which the mold ~~ejectors~~ ejector plate has a pair of mushrooms ~~(39)~~ and in which the plate holder of the machine is provided with a slide ~~(19)~~ which runs along the plate holder and has slots adapted to receive the mushrooms and to lock them in place following the movement of the slide controlled by a hydraulic cylinder ~~(21)~~.

36. (currently amended) A casting machine according to claim 32, especially for engine cylinders heads, destined to receive a mold with two sides, comprising two sides carriers ~~(1)~~ which are fixed to the corresponding side of the mold and slide along guide columns ~~(5)~~ and sliding gibs ~~(20)~~ fitted to the machine for a movement of the slides by hydraulic cylinders ~~(4)~~.

37. (previously presented) A casting machine according to claim 36, in which the sides are fastened to the sides carriers by automatic quick locking devices.

38. (currently amended) A casting machine according to claim 37, in which every sides carriers has a slide ~~(24)~~ with slots to receive a pair of mushrooms which protrude from the side of the mold and lock them in place following the movement of the slide controlled by a hydraulic cylinder ~~(25)~~.

39. (currently amended) A casting machine according to claim 38, in which the sides carriers ~~(1)~~ are hinged to the sides of the machine, making it possible to rotate then upwards by means of oscillating hydraulic cylinders ~~(7)~~ fitted to the machine to enable easy cleaning and repainting of the figure parts of the sides of the molds.

40. (currently amended) A casting machine according to claim 36, in which at least one side of the mold is made in at least two overlapping parts and in which the related side carrier is made up of at least two corresponding parts, each of which is moved by a hydraulic cylinder ~~(4)~~, said hydraulic cylinder being controllable independently or in parallel.

41. (currently amended) A casting machine, especially for engine cylinder heads, said machine having a top portion with a tilting arm ~~(8)~~ hinged to the top portion, ~~destined for the movement of~~ for moving a metal male mold component for low-pressure casting or a casting according to claim 28, and/or for ~~the movement of~~ moving sealing means for the upper part of a mold positioned on the machine, depending on the casting process used.

42. (currently amended) A casting machine according to claim 41, in which the metal male mold component and/or the sealing means of the upper part of the mold are

attached to a hydraulic cylinder ~~(10)~~ carried by the tilting arm for their vertical movement.

43. (currently amended) A casting machine according to claim 41, in which, during the casting process, the tilting arm is closed on the bench and locked to the latter from the opposite side compared with the hinged side by a locking device, such as a jack ~~(28')~~.

44. (currently amended) A casting machine according to claim 32, wherein the main lower structure ~~(30)~~ is removable from the upper structure ~~(31)~~ for placing said upper structure on a carrousel or on the ground for a gravity casting procedure.

45. (currently amended) A mold for obtaining castings, especially engine cylinders heads, comprising a bottom ~~(35)~~ and an upper part obtained through cores or a metal male mold component, ~~characterized by the fact that said bottom is provided with~~ having inlets ~~(36)~~ for coupling to pipes from a furnace ~~placed~~ underneath the mold and containing the molten metal and ~~by the fact that~~ feeding risers in said cores or in said metal male mold component ~~open feeding risers are provided for feeding the casting~~ molten metal into the mold as the cooled metal shrinks and for attracting any slag, fumes and gases contained in the molten metal.

46. (currently amended) A mold according to claim 45, in which the upper part of the figure is obtained by cores, comprising a plate ~~(45)~~ destined to be pressed, during the casting phase, onto the upper surface of the mold to prevent the molten metal from overflowing through the risers.

47. (currently amended) A mold according to claim 46, in which the plate is crossed by channels for the vacuuming of fumes and gases from the mold and is fastened to a support ~~(46)~~ in which there is a vacuum chamber ~~(46'')~~ communicating with an

external vacuum device, said plate's vacuum channels being provided with filters to prevent the passage of molten metal.

48. (currently amended) A mold according to claim 45, in which the upper part of the figure is obtained by the metal male mold component (51) and in which the male mold component is fastened to a plate (45) destined to be pressed, during the casting phase, onto the upper surface of the mold to prevent the molten metal from overflowing through the risers.

49. (currently amended) A mold for obtaining castings, especially engine cylinders heads, using a low-pressure casting procedure, where the upper part of the figure casting is defined by a metal male mold component (52), ~~characterized by the fact that wherein~~ said metal male mold component is crossed by channels (52) for the vacuuming of fumes and gases from the mold and is fastened to a support (46) in which there is a vacuum chamber (46) communicating with an external vacuum device, said metal ~~male's~~ male mold component's vacuum channels ~~being provided with~~ having filters to prevent the passage of molten metal.

50. (currently amended) A mold according to claim 49, in which only the plate or the support with the vacuum chamber are jointed to the hydraulic cylinder (10) carried by the tilting arm (8) on a casting machine for receiving a mold, where the mold is equipped with a bottom and an ejector plate extending downwards from said bottom, the casting machine comprising a lower main structure (30) suitable for housing a holding or maintenance furnace (32) for feeding the mold in a low-pressure casting procedure, an upper main structure (31) resting on said lower structure, a base plate (29) resting on the upper main structure (31), a cooled plate (16) positioned on the base plate (19) and suitable for receiving the bottom (35) of the mold, and further comprising, underneath the cooled plate (16), a plate holder (17) to be fastened to the

~~ejectors~~ ejector plate of the mold and running vertically between an inactive lowered position and a raised casting expulsion position.